ABSTRACT OF THE DISCLOSURE

A surface treating process according to the present invention, a vapor deposited film is formed from an easily oxidizable vapor-depositing material on the surface of a work by evaporating the vapor-depositing material in a state in which the vapor deposition controlling gas has been supplied to at least zones near a melting/evaporating source and the work within a treating chamber. Thus, the vapor deposited film can be formed stably on the surface of a desired work without requirement of a long time for providing a high degree of vacuum and without use of a special apparatus. In addition, the use of the surface treating process ensures that a corrosion resistance can be provided to a rare earth metal-based permanent magnet extremely liable to be oxidized, without degradation of a high magnetic characteristic of the magnet. A surface treating apparatus according to the present invention includes a melting/evaporating source for melting and evaporating a wire-shaped vapor-depositing material containing a vapor deposition controlling gas, and a member for retaining a work on which the vapor-depositing material is deposited. The melting/evaporating source and the work retaining member are disposed in a treating chamber of the surface treating chamber. The apparatus further includes a vapor-depositing material supply means for supplying the wire-shaped vapor-depositing material containing the vapor deposition controlling gas to the

melting-evaporating source.